Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_ Per. \_\_\_\_\_\_\_\_\_

**DIFFUSION/OSMOSIS VIRTUAL LAB**



**PART I - DIFFUSION**

**Click on the link below to see information on diffusion:**

[**http://www.wisc-online.com/objects/index\_tj.asp?objID=AP1903**](http://www.wisc-online.com/objects/index_tj.asp?objID=AP1903)

**\*\*\*Remember that solutes are things that are dissolved and solvents are things that do the dissolving.**

1. Is diffusion active or passive transport of particles across the cell membrane?

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2. In the very beginning, how does the concentration of the blue particles on side A compare to that

of side B? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3. Net diffusion moves down the concentration gradient from areas of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

concentration to areas of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ concentration.

4. Eventually the two sides will come to equilibrium. What is equilibrium? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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5. What happens to the movement of molecules when the temperature is **RAISED**?

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6. What happens to the movement of the molecules when the temperature is **LOWERED**?

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7. Watch the video at :

[**http://highered.mcgraw-hill.com/sites/0072495855/student\_view0/chapter2/animation\_\_how\_diffusion\_works.html**](http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_diffusion_works.html)

**After the video scroll down and take the quiz. Submit your answers – via email or print results.**

**PART II - OSMOSIS**

**Click on the link below to see information on osmosis:**

[**http://www.wisc-online.com/objects/index\_tj.asp?objID=AP11003**](http://www.wisc-online.com/objects/index_tj.asp?objID=AP11003)

8. What is osmosis? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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9. What does the dashed line in the beaker separating the two sides represent?

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10. Why are they assuming the LARGE molecules will stay on their own side of the membrane?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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11. Because molecules will move from one side to another to come to an equilibrium, or balance

of concentration, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_moves from side B to side A, so the

water level on side A goes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

12. In living things, cells must be in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ solution where water

leaves and enters the cell at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

13. What happens to a cell in a concentrated, hypertonic environment? Click on the “View

Movie” icon to find out. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. What happens to a cell in a concentrated, hypotonic environment? Click on the “View

Movie” icon to find out. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15. Watch the video:

[**http://highered.mcgraw-hill.com/sites/0072495855/student\_view0/chapter2/animation\_\_how\_osmosis\_works.html**](http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_osmosis_works.html)

**After the video scroll down and take the quiz. Submit your answers via email or print.**

**PART III - DIFFUSION/OSMOSIS DIALYSIS BAG LAB**

**Click on [http://web.archive.org/web/20130504172034/http://bioweb.wku.edu/courses/Biol114/Osmosis/Osmosis1.asp](http://web.archive.org/web/20130510044147/http:/bioweb.wku.edu/courses/Biol114/Osmosis/Osmosis0.asp)**

**\*\*Read the introductory information. Click on the red circles whenever you see them in the lab, and keep clicking on each one until you have completed the information at that red circle**

16. Diffusion is the movement of particles from an area of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

to an area of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

17. What is the difference betwwen active transport and “passive transport” (diffusion, osmosis,

facilitated diffusion)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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18. Click on the red circle. What is the difference between the way small and large molecules

diffuse through the cell membrane? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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19. Cell membranes are selectively permeable. What does this mean? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Click on the red circle to proceed through the experiment and answer the questions below:**

20. Write out the steps of the experiment below. Be very detailed about what is being used:

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21. Protein and starch are macromolecules. What is a macromolecule? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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22. Draw a picture of the dialysis tubing and the beaker below with the original solutions that were put in them labeled beneath them:

23. Draw the four test tubes that have the solution from the **BEAKER AFTER** the experiment and label them with what they are being tested FOR:

24. Which test tubes had a positive result? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

25. Draw the four test tubes that have the solution from the **DIALYIS BAG AFTER** the experiment and label them with what they are being tested FOR:

26. Which test tubes had a positive result? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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27. Draw the two tables of results below:

28. Take the quiz at the end of the lab and PRINT the quiz page. Turn the printed page into me as well as this lab packet.